M.E. First Semester (Digital Electronics) (Part Time / Full Time) (C.G.S.- New)

13201 : Digital Instrumentation : 1 UMEF 1

P. Pages : 2 | **AW - 3755**

Time : Three Hours | Max. Marks : 80

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Notes : 1. Due credit will be given to neatness and adequate dimensions.
2. Assume suitable data wherever necessary.
3. Illustrate your answer necessary with the help of neat sketches
4. Use of pen Blue/Black ink/refill only for writing the answer book.

1. a) Implement the system to detect the order of occurrence of the events in small time interval measurement and explain its operation with the help of wave form. **7**

b) Explain fast low frequency measurement of sinusoidally varying signals. **7**

OR

2. a) State requirement of on ideal phase meter. Explain phase measurement through time measurement. **7**

b) Describe any one method of measuring quality factor of a capacitor. **7**

3. a) Draw and explain network analyzer. **7**

b) Draw and explain distortion analyzer. **6**

OR

4. a) With neat diagram, explain Heterodyne wave analyzer. **7**

b) With neat diagram, explain protocol analyzer. **6**

5. a) Describe IEEE - 488 bus standard. Define talker, listener and controller terms related to IEEE - 488 Bus. Also draw the timing signals associated. **7**

b) Explain automatic test equipment for PCB. **6**

OR

6. a) Explain automatic test equipment for component testing. **7**

b) Explain in details the Instrumentation in hazardous area. **6**

7. a) Explain smart sensor and state its features. **7**

b) Draw and explain Pc hard system for control of Hot - air blower. **6**

OR

8. a) What is virtual Instrumentation? Explain with suitable example. **7**

b) What are different types of Data Acquisition system. Explain any one in details. **6**

9.	a)	State merits and demerits of distributed computer control system.	7
	b)	Describe the SCADA system in details with the help of suitable block diagram.	6

OR

10.	a)	Explain the structure of direct digital control . Describe the position algorithm.	7
	b)	Explair the hierarchy for distributed control system.	6
11.	a)	Describe basic structure of the PLC.	7
	b)	Draw typical ECG waveform. Explain various time interval measurement and amplitude measurement.	7

OR

12.	a)	Explain the different symbols used in ladder diagram for input devices, output devices and switches with one example of compute ladder diagram.	7
	b)	Explain neuro-fuzzy, control system.	7

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